VERB TENSES AS EXPRESSORS AND INDICATORS

By FRANK B. EBERSOLE

HERE I briefly examine two current " theories " of verb tenses. The first is that tenses are " expressive " and not " indicative ". The second is that tenses are token-reflexive words. The basic principle underlying both these " theories " is that verb tenses are untidy and ought not to appear in an ideal language. I shall try to show (1) that verb tenses are not primarily expressive, and (2) that an interpretation of verb tenses as token-reflexive involves a major overhauling of the basic outlines of an ideal language ; it involves changes so great that it would probably vitiate the reasons for which an ideal language was constructed.

(1) The terms " expressive " and " indicative " are due to Russell who gives an account of verb tenses as expressive.[1] Russell simply borrows this commonplace psychological distinction and does little to clarify it. The " significance " of a sentence, he says, is what it expresses. In the case of sentences which describe a state of the believer, such as, " I am hot ", what is expressed and what is indicated are identical. In general, however, they are distinct. In the case of factual sentences which are not about self-states, they indicate either their verifier or nothing. They ordinarily express belief. " The professor is insane," if true, indicates the fact about the professor which makes it true. If false, it indicates nothing. It expresses what is indicated by the sentence, " I believe the professor is insane." " Belief " is vague. Depending on context, it may mean perception, memory, or expectation. In those terms Russell states his theory of tenses.

" . . . The proposition ' there is a loud bang at time t 'may be expected before t, perceptively judged at t, and recollected after t. The tense of the verb—' will be,' ' is,' ' was '— expresses the difference of bodily state in the believer, according as he expects, perceives or recollects. Tense applies *primarily* only to matters within my perceptive experience, and expresses the species of belief involved, not a character of what the belief ' indicates. ' "[2]

This does not tell us how Russell would develop his theory to deal with sentences which do not describe what is in perceptual experience. It is perfectly obvious that " Thales fell in

[1] *Inquiry into Meaning and Truth*, p. 140, p. 313 and passim.
[2] Russell, *op. cit.*, p. 113.

a well " cannot express a state of recollection in anyone living
to-day. Nor can, " There are mountains on the other side of
the moon " express what anyone at the present time perceives.
More recently[1] Russell has suggested how he would proceed to
a more general theory :

> " The word ' fire ' may be caused in me in various ways.
> When it is caused by the sensible presence of fire, I com-
> municate the fact by the sentence, ' There is fire here ' ; when
> by the memory, by the sentence, ' There was fire here '. But
> I may use this sentence not to express a memory but to report
> what I have been told, or to state an inference from charred
> embers."

Thus what is expressed is a characteristic state of belief which
reflects a difference in its causes. But the causes listed by
Russell do not correspond to a difference in verb tenses which
would be used to express the belief. Let us then collect the non-
perceptual causes listed by Russell into one class and say that
sentences which express beliefs caused by them express a "back-
ward-looking attitude ". Then other classes of causes will
determine an " outward-looking attitude " expressed by the
present tense, and a " forward-looking attitude " expressed
by the future tense.

Since at best Russell gives but the germ of a theory, I do not
want to press out of a few quotations more than they contain.
Nor do I want to examine Russell's epistemology. Rather I
shall try to characterize in general what an expressive theory of
verb tenses would be like. I shall try (1) to describe the method
which clearly lies behind Russell's or any other expressive
theory ; (2) to state in outline a more complete theory, without
reference to any special theory of perception, memory, or
anticipation ; and (3) to estimate the adequacy of such a theory
of tenses.

(1) (*a*) There lies behind the expressive theory of tenses the
assumption that we have a pretty neat classification of words by
the functions they perform, and that if a word does not perform
one function, then it must perform some one other. Suppose
we have in mind some such classification as this : denotative,
prescriptive, logical, expressive. Verb tenses are clearly not
prescriptive. Let us look at an example to test the verb tense
for other functions. " John was ill on the morning of August
second ". Here " ill " is a two-place predicate, with the time-
constant as one of its arguments. It is denotative. The verb
fulfills the function of copula. Therefore it is a logical word ;

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[1] *Human Knowledge. Its Scope and Limits.* p. 104.

but for this purpose it might as well be the " timeless ' is ' of logic". The tense is not yet accounted for. No other category remains except the expressive. The fact, John-ill-Aug. 2, a.m. could be asserted in a tenseless statement. Yet something is left out in a tenseless statement, a certain kind of " reference " to the speaker or writer. No such reference is indicated. Therefore we must assume that the reference is expressed.

(1) (b) The expressive theory is arrived at by comparing ordinary English with a simpler, more tidy language structure, one in which words giving temporal reference are all of the same "logical kind". All scientific knowledge could be formulated in this language ; and for this purpose it needs perhaps only words designating properties and certain spatial and temporal relations, a few logical terms, and one or two ego-centric particulars. If this is not the list of minimum baggage, then some other. At any rate it is possible to construct an ideal language into which we can translate everything which can be known, and construct it in such a way that its word-kinds have a one-one correlation with certain word-kinds of ordinary language. But this language has no need for any words corresponding to verb tenses.

(2) Let us play Carnap's kind of word game and construct an overly-simplified kind of ideal language. First we make a " semantical system ". We need a kind of individual constant designating time units, and a group of predicators designating Earlier Than, Later Than, and other relations between time units. We introduce all other designative predicates as at least two-place so that there is one place for a time-argument. By this device we forbid any expression which does not have a certain requisite completeness with regard to stating times. Thus we assure simple rules of substitution and a simple form of the law of contradiction. We will prescribe by rule the conditions under which arguments will appear within brackets following the predicators. The rules of meaning for the brackets will take the form of truth rules for the atomic sentences in which they appear, etc. If we have given this semantical system enough designative predicates all that we know about the world can be said in it. In particular, all indicative sentences in conversational language, when they are " analyzed ", can be translated into it.

Let us now expand the semantical system into a language. This requires adding expressive signs such as '⊢' to express assertion, '⊢'[1] to express consideration but not assertion, etc.

[1] Cf. C. I. Lewis, *Analysis of Knowledge and Valuation*. p. 49 ; H. Reichenbach, *Elements of Symbolic Logic*, p. 57.

These terms will precede a sentence when we wish to express its mood. Now we can give a list of logical, designative and expressive terms. But we still have no device to translate verb tenses. It we do not want to be redundant, we must introduce them as expressive signs.

The past tense verb ending expresses an attitude of backward-looking. Let us symbolize it ' ← '. The future tense verb auxiliary expresses an attitude of forward-looking. Let us symbolize it ' → '. The present tense expresses an attitude of out-looking to the present. Let us symbolize it ' ↑ '. The other tenses would be complexes of those three expressions in a certain order. Past perfect : ' ← ← '. Present perfect : ' ↑ ← '. Future perfect : ' → ← '. This is surely enough to show the general line on which such a theory would be formulated.

(3) Before entering upon a direct criticism of the " theory ", it will be useful to comment briefly upon its nature. Let us take an example : " Jones was sick on August second, 1951 ". This would be symbolized : ← (∃t) Aug. 2, 1951 (t), S (a, t). The symbolic sentence provides an " analysis " of the sentence in English because it tells us in a way what the English sentence means. It does this because for the " ideal " language in which the symbolic sentence is written, we have a determinate set of steps which can be taken to find out its meaning, steps terminating in the rules of formation, designation, truth, and expression. These rules are simple in form and few in number. Depending upon the view taken of analysis they (1) state designata only for terms which have " epistemological priority ", which denote " ultimate constituents and components ", or (2) they are precise and unambiguous ; or (3) they formulate in words the directives or prescriptions which are followed in everyday language when it is functioning most efficiently. They constitute " knowledge that " for what in everyday life is " knowledge how ".

This theory must be stated in a metalanguage adequate to speak of both analysandum and analysans. Its form is a general law, saying that all verb tense endings and auxiliaries in conversational language have the properties of expressive signs of the specified type in the ideal language. This law is simply false, and I think all such general statements about ordinary language are false. If they were true, analysis would be trivial and unnecessary. The meaning of words in conversational language is determined too much by context to allow of any such simple characterization. We construct an artificial language out of a " place for everything and everything in its place "

motive, and because ordinary language does not satisfy it. How strange, then, to insist that ordinary language is just as neat and tidy. This is not to say that the expressive theory has no value.

It does seem plain that verb tenses are sometimes if not always expressive. This observation, however, may be trivial since all words in ordinary language are partially expressive, and sometimes mainly so, depending on context. There can be no doubt, for example, that a sentence in the past tense expresses a backward-looking attitude. But the expressive theory of verb tenses, I think, makes two mistakes : (*a*) It is a mistake to assume that the verb form alone is the expressive device. Much expression in ordinary language is carried by the physical, linguistic, psychological and social environment of an utterance. Also the expressiveness depends upon habit-inferences which are made from the occurrence of the utterance. This is particularly important with regard to tenses, for the time and place of the utterance are taken as understood. The extreme of expressive function of verb tenses would seem to be present in those instances where a surprising tense is used, as for example when one reports, " The election is won " before the election. Such a sentence expresses stronger and more confident anticipation than could be achieved even by underlining " shall be ".

(*b*) Secondly, and far more serious, the expressive function of verbs is generally quite secondary. This can be tested by the usual method of constructing an imaginary dispute. Suppose someone says, " You died," and I deny it. In my denial am I asserting that I do not die? (where the verb is meant to be tenseless). I must be asserting, " I do not die in the past ". Now if I regard my statement as contradicting his, he must be taken to assert, " You die in the past." In short, the verb ' died ' must be used to assert something about time. In general I do not think this is a very good kind of argument, for people do often dispute about expressions as if they were assertions. But the case of verb tenses seems a particularly simple and transparent case of something being asserted rather than expressed.

(II). The most popular " theory " of verb tenses as indicative is the theory that they are token-reflexives. A token-reflexive expression is one which can be understood as referring to its own token. Reichenbach has given the most complete treatment of token reflexives.[1] He claims that ' I,' ' you,' ' here,' ' now,' and ' this ' can be analyzed as token-reflexive. ' I ' means ' the person who uttered this token ' ; ' now ' means ' the time

[1] H. Reichenbach, *op. cit.*, pp. 51, 52.

at which this token was uttered ', etc. Now if we construct in the language of analysis, names for tokens, we can analyze token-reflexives as follows : " I am tall " means ' $T[(\imath x)P(x). Sp(x,\Theta)]$' where ' T ' translates ' tall ' ; ' P,' person ; ' Sp ' ' speaks ', and where ' Θ ' is the name of the token appearing within quotes just after the colon in this sentence.

This illustrates what Reichenbach means by a token reflexive, but I think there are two serious difficulties in it. (1) The token-name, ' Θ ', cannot be a name in the usual sense of a metalinguistic name. That is, it cannot name an entity with reference to its meaning or else the analysans would be self-referent and in violation of the theory of language levels which Reichenbach himself states.[1] It must name the ink marks or spoken sounds. It is necessary here to distinguish between semantical and physical token. We speak of the semantical tokens when we define a word as a class of equisignificant tokens. We speak of physical tokens when we define a word-form as a class of similar tokens. Reichenbach does not mention this restriction. I shall assume that ' Θ ' denotes the physical token. (2) He does not tell us how to distinguish the case where " This is red " is uttered by two people when pointing to the same object, from the case where they are pointing to different objects. In the first case the two tokens would ordinarily be said to have the same meaning. In the second case, they would be said to have different meanings. Without some account of various kinds of synonymity, his analysis is incomplete. I shall assume that he means to imply that token-reflexive sentences are never synonymous in the sense that their sameness of meaning can be determined by linguistic considerations alone. But then what is often a linguistic consideration for everyday language, *viz.* context, is not permitted to be one for an ideal language.

Hereafter let us take ' synonymous ' in Carnap's sense meaning equivalence in truth value which can be determined by the rules of semantics alone (" L- equivalent "). It is plain that according to Reichenbach's analysis no two tokens of a token-reflexive expression are ever synonymous. Even two tokens like " I am hot " when uttered twice in rapid succession by the same person are not synonymous on his account. Yet they would ordinarily be taken to have exactly the same meaning. They are not synonymous on Reichenbach's analysis because he takes no account of the fact that whenever two such tokens are uttered in rapid succession by the same person, they *are* synonymous (or at least as nearly as any two expressions in ordinary

[1] *Ibid.*, p. 33.

language ever come to being synonymous in this precise sense).

Yet no analysis would be complete unless it told us what facts we needed to know in order to understand the meaning of the analysandum. When two people utter, " I am tall ", we know the two tokens do not have the same meaning. When they are uttered by the same person we know they do mean the same thing. " To-day is Tuesday " has the same meaning all day Tuesday. A similar token means something else on Wednesday. These things we understand about the English tokens. A correct analysis would have to make explicit what we understand. It would have to state the conditions, which when present, determine sameness of meaning. A more elaborate analysis than Reichenbach's is called for. I shall try to state a more complete analysis for one simple case. Let us take, " I am tall ", which would have the same meaning whenever uttered by one person. In order to shorten the symbolic expression, let us introduce the following definition :

$$a^* = df. \, (\imath x) \, P(x) . \, Sp \, (x, \Theta)$$

Also we will need the following additional rules : ' t ' is an individual variable which takes time units as values : ' Tok $(\hat{x})$ ' is a predicate which designates Token ; and ' Sim$(\hat{x}, \hat{y})$ ' is a predicate which designates Similar To. Now the most likely analysis would be :

$$T(a^*) v(t)(y)[Tok(y) . \, Sim \, (y, \, \Theta) . \, Sp(a^*, y, t) \supset T(a^*)]$$

(The person . . . is tall or if at any other time [the same] person utters a similar token, then [the same] person is tall)

The same principle would apply to the other token-reflexive words. But as I shall try to show that this analysis is wrong in any case, I shall not further illustrate. Also I will reserve criticism for the very similar case of verb-tenses.

Reichenbach says that verb tenses are token-reflexive, but he gives no symbolic translations and says nothing to substantiate his view. Perhaps it is evident, for verb tenses do appear to behave very much like token-reflexives. They are obviously different but the difference does not seem to alter the nature of their reflexivity. A token like, ' 'There were mastodons in Michigan ", if it were uttered before the time of mastodons, would not be synonymous with a physically similar utterance at a time after mastodons had come and gone. The first would be false, the second true. But we could not determine their difference in truth value without knowing that the first occurred before mastodons arose, the second after they had become extinct. Sentences with tenses differ, therefore, from token-

reflexives in the kind of information required to determine sameness of meaning. In the case of token-reflexives, we need to know only whether the tokens are similar and whether they are uttered by the same person, or at the same place. In the case of expressions with verb tenses, we need to know whether the time of utterance was before, at the same time as, or after the event which the expression indicates.

The same sort of thing can be said about the negations of sentences using 'I', 'here', etc. and the negations of tense-sentences. Whether or not one token-reflexive expression is the negation of another can be determined only by certain information about the occurrence of the tokens. The token, "I am hot" is negated by the token, "I am not hot", when both are uttered by the same person in quick succession. A token like, "There were no mastodons in Michigan" would not negate, "There were mastodons in Michigan" if the first were uttered before mastodons, and the second after. I shall try to make these likenesses and differences more precise by attempting to give an adequate symbolic formulation of a simple sentence in the past tense. The difficulties are insuperable, and in order to make them plain I shall begin from the beginning and try an analysis analogous to the simple one which Reichenbach gives for token-reflexives like 'I', 'here', etc. This means first laying down some more of the rules of a semantical system similar to that outlined as part of the method of the expressive theory (but, of course without expressive terms, which in any case are never part of a semantical system). Let us take as an example the sentence, "Henry visited England in October, 1950." Now to the previous semantical system, we will need to add the following rules of formation and designation. ' $V(\hat{x},\hat{y},\hat{t})$ ' is a predicate designating Visited and taking a time argument in its third place ; ' t ' is an individual variable taking time designators as values ; ' t ' is a constant for October, 1950 ; ' a ' and ' e ' are individual constants designating Henry and England ; ' $P(\hat{x})$ ' is a predicate designating Person ; ' $E(\hat{x},\hat{\theta},\hat{t})$ ', a predicate designating Entertains and taking a sentence name as its second argument ; ' $B(\hat{t},\hat{t})$, a predicate designating Before (in time ;) and ' θ ' is an individual constant which designates the sentence-token of our example. Then our example taken as a token-reflexive would mean :

(1) $V(a,e,t^*) . (\exists x) (\exists t) P(x) . \exists(x,\theta,t) . B(t^*,t)$

(At time t^* Henry visits England and there is a person who entertains θ at another time, and t^* is before this other time).

It is clear that this is wrong analysis, because it states as part of the meaning of " Henry visited England, etc. ", that someone entertained the token named. When we negate our analysis, we get as a disjunction,

$$(2) \sim V(a,e,t^*) \text{ v } (x)(t) \sim P(x) \text{ v } \sim E(x,\Theta,t) \text{ v } \sim B(t^*,t)$$

(Either Henry does not visit England at t* or there are no persons or no one ever entertains Θ, or the time at which someone entertains Θ is not after t*).

The first and last terms seem good enough, but one could hardly negate " Henry visted England, etc. " by saying that no one thought of a special token. It seems clear that we do not want to refer to a token. Hence the sentence cannot be token-reflexive. It might seem plausible to put " Henry visited England, etc.", a physical name of all tokens similar to ' Henry visited England, etc.,' in place of ' Θ ' in the analysis. We must remember that instances of " Henry visited England, etc. " entertained before Henry visited England do not mean the same thing as those occurring after. Even so, the analysis says it was entertained after, so there would be no difficulty on that score. However, " Henry took a trip to England, etc. " must certainly be regarded as synonymous with " Henry visited England, etc. ". In view of this we must replace ' Θ ' with an expression saying that someone entertained some sentence synonymous with " Henry visited England etc. " where the quotes construct a semantical name.[1]

$$(3) \text{ } V(a,e,t^*) \text{ . } (\exists x)(\exists t)(\exists s) P(x) \text{ . } E(x,s,t) \text{ .}$$
$$\text{Syn}(s, \text{ ' Henry visited England, etc.'}) \text{ . } (Bt^*,t)$$

Where ' s ' is a sentence-name variable, and ' Syn $(\hat{s}, \text{ ' } \stackrel{\perp}{\_} \text{ ')}$ a predicate designating Synonymous with.

The negation of this sentence would include the same first and last terms as (2) but differ in the second and third terms which

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[1] Cf. J. Cohen, " Tense Usage and Propositions," ANALYSIS, XI, 4 (March, 1951), pp. 80–87. Since finishing this article, my attention has been called to this excellent analysis of J. Cohen. His analysis of a past tense example is essentially the same as (3) with the addition of the reflexiveness introduced in my (3ª) (infra p. 111). He suggests for ' Brutus killed Caesar ' the following : " For someone and one only t, x, y, x is Brutus, x kills z at tª, z is y, y is killed at tᵇ, y is Caesar, t is tª, t is tᵇ, t is the time under reference and the time under reference is prior to the time at which any member of the following class of tokens is uttered, written, or thought, *viz.* the class consisting of this token and of all other past-referring tokens which would normally be thought to be in direct agreement with the whole or any significant part of it that includes a token-reflexive specification of time'. I have many questions about this but would like to call attention to just one point. Cohen must make reflexive reference to tokens *semantically*. His analysis constructs a class consisting of tokens which are " thought to be in direct agreement ". This surely means that the tokens are equisignificant. He does not grasp the significance of referring not to marks but to meanings, for this makes his analysis self-referent in violation of the language-level " theory ", as I point out in the following pages.

would be, " There are no persons ", and " No one entertained
a sentence synonymous with ' Henry visited England etc. ' at
a time, t." Now it might seem strange that " Henry visited
England etc. " could be falsified by " There are no persons at
any time " or by " No one ever entertained a sentence synony-
mous with ' Henry visited England, etc " . It seems to me
that most of this strangeness is just the puzzling character of
verb tenses made explicit. If verb-tense sentences are indicative,
they include a hidden reference to the speaker or writer or
thinker and the time of speaking or writing or thinking relative
to the time of the event indicated. So far this would seem to be
a fairly adequate analysis of the kind of verb-tense sentence
we have considered. But the fact that they are reflexive creates
an insuperable objection to finding an analysans in any ordinary
semantical system. According to the usual conception of a
semantical system, names of sentences occur only in the meta-
language ; therefore (3), which contains a sentence name, is a
metalinguistic sentence. This shows that the analysandum,
" Henry visited England etc. " is itself a sentence in English
analogous to a metalinguistic sentence. Therefore " Henry
visited England etc. " refers to itself. But the symbolic analysis
does not. It refers to ' Henry visited England etc. ' It is not
reflexive in the same sense as the original. In order to make it
so, we must put in place of ' Henry visited England etc. ' the
name for the symbolic expression (3). Let us use the number
' (3) ' for its name. Then :

(4) $V(a,e,t^*) . (\exists x) (\exists t) (\exists s) P(x) . E(x,s,t) . Syn (s, (3)) . B(t^*,t)$

But now since ' (3) ' is a metalinguistic name, (4) is in the
meta-metalanguage, and the sentence still does not refer to itself
for it doesn't refer to (4). If we put (4) in place of (3) in a new
expression (5), we create a sentence in the metametametalan-
guage which refers to a sentence in the metametalanguage, but
still does not refer to itself. Also (4) is indeterminate in meaning.
In short, the usual rule of language levels prohibits an adequate
analysis of verb tenses. There seems no way out of this except
to permit the presence of sentence-names and sentence-name
variables in the object language itself, that is to allow sentences
in the object language to refer to themselves and other sentences.
In keeping with the general conception of analysis which I am
here using, it would still be necessary to confine the usual
semantical terms, ' designates ', ' true ', etc. to the metalanguage.
Then it would also be necessary to permit in the metalanguage
names for sentences in the metalanguage and sentence-name

variables taking names of metalanguage sentences as values. The revision required would be to regard sentence names and sentence-name variables of all kinds as occurring on all levels of language without restriction.

Of course we would need suitable rules to prohibit the semantical antinomies, rules to eliminate self-negation and reflexive assertion of falsehood. In such a semantical system a rule would be needed to prohibit the formulation of the four sentence forms : (*a*) Sentence (*a*) is false ; (*b*) All sentences are true ; (*c*) Heterological is heterological ; (*d*) The following sentence is true. The preceding sentence is false. Whether a simple rule could be devised, or whether we will have to remain content with an enumeration of *ad hoc* rules, I do not know. But this much is clear, if verb tenses are to be analyzed as indicative expressions, the usual rule of language levels has to be modified. The usual semantical system does not reflect the form of conversational language in this respect. Envisaging the above modification, the analysis of " Henry visited England etc. " will be in the metalanguage, but genuinely reflexive.

(3^a) $V(a,e,t^*)(\exists x)(\exists t)(\exists s) P(x) . E(x,s,t) . Syn (s,(3^a)) . B(t^*,t)$

' (3^a) ' is a metalinguistic name for a metalinguistic sentence and ' s ' a sentence-name variable taking names of sentences of any level as values.

One thing more remains problematic about this analysis viz., the extension in meaning of the term ' sentence ' to include sentences merely thought. In this respect, it would be more in keeping with the ordinary sense of " entertains " not to refer to sentences but to use instead the semantical concept of proposition or Carnap's " transferred sense of logical equivalence " (identity) as holding between propositions. Thus we can speak of a proposition being identical not with (3^a) but with the proposition designated by (3^a) viz. that $V(a,e,t^*) \ldots B(^*t,)$. Let us abbreviate this proposition, that 3^a. Since (3^a) is a sentence in the metalanguage, the expression ' that 3^a' will be its translation into the metametalanguage. We will use in the metametalanguage the variable expression ' ^{M}proposition' which has as its value intension propositions designated by metalinguistic sentences. In these terms the analysis would be :

(5) $V(a,e,t^*) . (\exists x)(\exists t)(\exists {}^M proposition) P(x) .$
$E(x, {}^M proposition, t) . Identical ({}^M proposition, that 3^a) . B(t^*,t)$

This analysis has the merit of corresponding more closely to conversational language in one respect, but as Carnap has

indicated,[1] it may turn out to be another way of saying the same thing as (3ᵃ). To demonstrate whether this is the case or not, we would need to have the complete rules for this rather odd meta-language stated. We should then have to find out in particular whether everything that is semantically interesting about the class of tokens denoted by ' (3ᵃ) ' and the proposition that 3ᵃ could be expressed in a neutral metalanguage.

This only begins the complications, but it has surely gone far enough. Three major criticisms to this kind of analysis are by now fairly evident. (1) I have suggested only the form of the " ideal " language and its metalanguage. I have not tried to work it out. But an analysis of this kind would serve its purpose only if the rules of the language were explicit and its main consequences derived. The complications seem insuperable. (2) Also the complications seem to vitiate the purpose of the analysis. An analysans should be clearer than its analysandum. The language of the analysans should be simpler than that of the analysandum. But the more nearly adequate our analysis becomes, the closer the " ideal " language becomes to the decried messiness of ordinary language. In particular it requires sacrifice of some of the general principles which make it " ideal ". The use of the " timeless ' is ' " is not merely a quaint manner-ism of logicians, but an important and deliberate deliverance from the difficulties of tenses. Likewise the " theory " of language-levels does away with *ad hoc* and piecemeal treatment of the semantical antinomies.

(3) Imagine the analysis of " Henry visited England, etc. " to be completed along the lines suggested, and still not much has been done toward an understanding of the peculiarities of verb tenses. It is a very simple instance of past tense. It would be simple to extend the method to the present and future cases. But the perfect and extended cases would be a more com-plicated matter. Reichenbach has shown that these tenses refer to three time points, not two. According to him, they refer to a time from which the indicated event is viewed (" point of reference ") as well as the time of the token (" point of speech "). If I have been correct, the time of speech is not referred to except relative to the time of the indicated event. With this exception, Reichenbach's observations seem correct. However it seems unlikely that one can make simple generalizations about conversational language of the kind which Reichenbach implies, something like, "All sentences in the past perfect extended tense refer to three time points, the point of reference being tempor-

[1] *Meaning and Necessity*, Chap. IV.

arily between the point of speech and the point of the event ".
In some contexts, e.g. " I had been seeing some birds " means
this. In other contexts, the past perfect extended seems to mean
the same as the present perfect extended, and even perhaps the
same as the simple past. Suppose I am on an ornithological
field trip, and while looking through my glass, I am accosted
by a very noisy fellow who asks, " What do you see ? " When I
answer, " I had been seeing some birds ", that seems indicatively
the same as, " I have been seeing some birds ", or even, " I saw
some birds ".

It does not seem possible to divine the meaning of English
words and sentences except by studying them in the various
contexts in which they are used. For philosophers the important
sense of the " meaning " of a word *is* its use. I am inclined to
regard the attempted analysis of verb tenses by translation into
an " ideal language " as a *reductio ad absurdum*.

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MR. ANDERSON ON SUBJUNCTIVE AND COUNTERFACTUAL CONDITIONALS

By A. C. LLOYD

MR. ANDERSON proposes[1] to reduce the problem of
counterfactual conditionals to that of subjunctive con-
ditionals ; for past tense subjunctive conditionals, he argues,
do not make a distinct class by necessarily implying the denial
of their antecedents. His argument rests on an appeal to English
usage. I wish to suggest that he has not analysed such usage or
has done so at the least questionably. (My remarks would do
nothing to refute his conclusions if these were presented only
as proposals towards formalisation).

Anderson supposes a doctor investigating Jones's death to
say,

(1) If Jones had taken arsenic, he would have shewn just
exactly those symptoms which he does in fact shew,

and thereby to be lending support to the truth of the antecedent.
I.e. there is a suppressed prefix,

Jones took arsenic, for . . .

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[1] Alan Ross Anderson : "A Note on Subjunctive and Counterfactual Conditionals,"
ANALYSIS, XII (1951), 35-38.

Now the majority of their uses suggest that past tense sub-
junctives regularly imply the falsity of the antecedent ; and on
this hypothesis we have to ask why the doctor does not say,

> (2) [. . . for] if Jones took arsenic, he shewed exactly
> those symptoms . . .

I suggest that there are two reasons why the doctor breaks
the " rule " : it is not possible to say that one is operative
rather than the other or both together. First, (1) expresses, or
may be expressing, its dependence on the general hypothetical,
(G), " If a man takes arsenic he shews those symptoms ". For a
regular way of emphasising the generality of this statement is to
use the form (G¹), " If a man were to take arsenic he would shew
those symptoms ". This gives the substitution-statement,

> If Jones were to have taken arsenic, he would have shewn
> exactly those symptoms . . . (3) ;

and (3) commonly becomes (1), partly because (1) is less cum-
brous, and partly because in (1) the reference to the *past* is more
direct.

The foregoing reason for preferring (1) to (2) draws attention
to the fact that the doctor's statement is part of an *argument*.
It also shews that, because (G) and (G¹) mean the same, the
difference between a subjunctive and an indicative form can be
of rhetorical rather than logical import. And we are now in a
position to understand the second reason for preferring (1) to
(2). The doctor is arguing, and therefore arguing *against the
supposition that* Jones did *not* take arsenic. Thus (1) expresses,
or may be expressing, the situation to be described in the
suppressed prefix,

> ' Jones did not take arsenic.' But . . .

—and not the prefix, " Jones took arsenic, for . . ." The former
prefix, which *denies* the antecedent (in quotes, if you like, or
with a question mark just to shew that it is a supposition), does
not represent the logical situation of the sentence (1) as it is
interpreted ; for it is not part of the sentence, and the doctor
has, and means us to have, in mind a state of affairs in which
the antecedent is true. But it represents the rhetorical situation
of the doctor making the statement. And we have to take notice
of the rhetorical situation as well as the logical ; for if Anderson
had considered only the latter, *i.e.* considered (1) as a sentence
in the abstract, he would have had no grounds for claiming
that it would lend support to the truth of the antecedent.

This last point is important in case of an objection to my
remarks. Suppose it is said that it is an ignoratio elenchi to
rebut an appeal to ordinary language by explaining away a gram-

matical form in the interests of a logical preference. Then the reply is in two parts. In general it is to be remembered that if, like Anderson, we are arguing positively, we are always making some logical choices among the anomalies of ordinary language, *i.e.* selecting certain logical situations for certain grammatical forms. And secondly, unless the appeal in this particular case goes beyond the grammatical form into the *rhetorical* situation (suppressed prefixes) it cannot elicit any answer to the logical question (viz. what truth value of the antecedent is implied). And on the general problem of conditionals this is the only point I wish to make that perhaps is not purely negative.

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NECESSARY AND CONTINGENT STATEMENTS[1]

By BERYL LAKE

THERE is a fashion among contemporary philosophers to attack the traditional labelling of statements as either ' necessary ' or ' contingent '. One line of attack is to stress an apparent similarity between some necessary statements and contingent statements, thus making the dissimilarity between them look unimportant. Another is to claim that there is a class of statements to which the distinction between being necessary and being contingent does not apply. The first line of attack is made by those who hold that both contingent and *a priori* synthetic statements are " about reality ", so that any difference between them tends to become minor. The second is made by those who, like Dr. Waismann, argue that there are some statements with regard to which " the philosophical antithesis ' contingent-necessary ' loses its edge ".[2] One such statement discussed by Dr. Waismann is " I see with my eyes ".

I wish to argue (1) that the important dissimilarity between the kind of statements traditionally labelled ' contingent ' and those traditionally labelled ' necessary ' is that the first but not the second are " about reality ", and that therefore the labels mark an important difference. I also wish to argue (2) that " the

philosophical antithesis " does not " lose its edge " when it is applied to statements like " I see with my eyes ".

Dr. Ewing, in a paper to the Aristotelian Society,[1] argued that necessary synthetic statements, for instance, " You cannot take a shilling from a purse which contains only a sixpence ", are descriptive of reality. According to him, " You are saying something about the world if you say that a certain state of affairs is impossible ". This is to suppose a similarity of descriptive use between

(a) You cannot take a shilling from a purse which contains only a sixpence, and

(b) You cannot grind coffee beans with a book.

It has to be admitted, I think, that there seem to be similarities between statements (a) and (b). Each *seems* to be stating that a certain state of affairs is *as a matter of fact* impossible in the world. Each begins with the same words, " You cannot . . . ", and each is made in what Carnap called the material mode of speech. But these linguistic similarities between (a) and (b) turn out to be misleading when full account is taken of the differences between them.

You cannot, as a matter of fact, grind coffee beans with a book, since coffee beans are too hard and books are too soft to make this physically possible ; and, as it happens, no human manipulation is capable of overcoming these difficulties. But grinding coffee beans with a book is a conceivable activity. It is quite easy to *picture* someone doing it, although as a matter of fact we never expect to see anyone actually doing it. Walt Disney, for instance, would be able to depict this physical impossibility in a cartoon.

Shall we then go on to say that you cannot, *as a matter of fact*, take a shilling from a purse which contains only a sixpence ? But what makes doing this impossible ? Is it because difficulties stand in our way which no human manipulation is capable of overcoming ? If we say this, we are saying something both false and misleading. For the impossibility is logical, not physical. It is impossible *even to imagine* taking a shilling from a purse which contains only a sixpence. If we *could* imagine this, we then could conceive what is logically impossible. And this implies that we can conceive a situation which, if it obtained, would *upset* a *logical* impossibility. In order to show the absurdity of this consequence, no more need be said than that a logical impossibility is an impossibility which could not be upset

[1] A. C. Ewing, " The Linguistic Theory of *A Priori* Propsotions ", *Proceedings of the Aristotelian Society*, vol. XL, p. 207.

even in theory. No one, not even Walt Disney, would be able to picture the possibility of taking a shilling from a purse which contains only a sixpence. For let us see what happens when we imagine ourselves trying to take a shilling from a purse which contains only a sixpence. We can imagine a person with a purse containing only a sixpence suddenly, by magic, taking a shilling out of it. But then, however suddenly the change occurred, at the moment just before she took the shilling out, the purse did *not* contain only a sixpence. It must have contained a shilling, or else it would be untrue to say " She took the shilling *out* of the purse ". We might, further, imagine a person taking out of her purse a sixpence which suddenly, by magic, turned into a shilling. But it would have to turn into a shilling at a given moment, either while still in the purse or when it was out of the purse. In the former case, we should say that the purse had not contained only a sixpence ; in the latter case, that what had been taken out of the purse had been a sixpence which had subsequently turned into a shilling. In either case, the example would fail to be an instance correctly describable as " She took a shilling out of a purse which contained only a sixpence ".

(*a*) states a logical impossibility, which cannot conceivably be upset. (*b*), on the other hand, is a contingent truth which can quite conceivably be falsified : a cartoon character could be portrayed uttering triumphantly but truthfully " Look, I grind my coffee beans with a book ". Now this important difference is completely blurred, if we are taken in by a delusive similarity and say that both (*a*) and (*b*) " are descriptive of the world ".

If we say this, it sounds as if " Look, I am taking a shilling from a purse which contains only a sixpence " makes the same kind of claim as " Look, I am grinding my coffee beans with a book ". It then sounds if in each case I am successfully accomplishing something very difficult and highly improbable, but logically perfectly possible. It sounds as if in each case I am overcoming a physical impossibility. And this is completely wrong. For if I said, " I grind my coffee beans with a book ", you could sensibly ask me to go ahead and do it. If you saw me reduce what you verified as coffee beans to a powder by pressing a book on them, as if I were pulverising moth-balls with it, you might say, " Yes, it isn't impossible after all, how extraordinary! " But if I said, " I can take a shilling out of my purse when it has only a sixpence in it ", you could not sensibly, and would not seriously, ask me to go ahead and do it. And this is because nothing that could happen would count as an instance of taking a shilling from a purse which contains only a sixpence.

The words " takes a shilling from a purse which contains only a sixpence ", as they are ordinarily used, combine into a phrase which has no application to any situation whatever.

The main and important difference between expressions which describe physical impossibilities and expressions which describe logical impossibilities is that if to the descriptive parts of the former, *e.g.* " grinds coffee beans with a book ", there were to correspond actual situations, the physical-impossibility statements would be false. While the parts of the latter which are in the descriptive idiom, *e.g.* " takes a shilling from a purse which contains only a sixpence ", describe no possible state of affairs whatever, nothing which, *even theoretically*, could upset the impossibility.

We are now in a better position to see one consequence of saying that statements describing physical impossibilities are factual and that statements describing logical impossibilities are also factual. To say this is to ignore completely the linguistic fact that what, supposedly, the second describe cannot, even as an outrageously far-fetched theoretical possibility, exist, while what the first describe could exist, and if they did exist, would render the statements false.

That necessary statements do not describe in the way in which contingent ones do seems more obvious still when we consider how disputes about whether a statement is contingent or necessary are settled. Suppose someone says, in a convinced tone of voice, that a lion is a canine. He is challenged by, " No. A lion is a feline ". He may go on to argue that he is *sure* a lion is a canine, because it has a dog-like look about its nose and because its body is more like a dog's than a domestic cat's. But the person who knew that a lion is a feline would not trouble to point out physical similarities and dissimilarities in order to show that a lion is more like a panther than an alsatian, say, or, if he did he would not be able to convince his disputant *that way* that a lion is a feline. What he would undoubtedly do would be to show him a dictionary, where he could read that ' lion ' is used to denote an animal to which the word ' feline ' always applies. The person who believed that a lion is a canine will now be convinced of his mistake. He will now know that when he states "A lion is a feline " he is making a necessarily true statement, one, that is, irrefutable by any physical fact, even though he may continue to think that a lion looks more like a dog and *ought* to be termed ' canine '. The point is that in settling such a dispute no reference is made to the supposedly necessary features of lions and felines, but simply to the way in

which words are used. This does not imply, of course, that a necessarily true statement is *equivalent* to a contingently true statement about word usages ; what it suggests is that a necessarily true statement is necessarily true *because* an appropriate contingent statement about word usage is true. "A lion is a feline " cannot for obvious reasons be replaced by a contingent statement about the uses of the words ' lion ' and ' feline ', nevertheless what makes "A lion is a feline " necessarily true is the usage of ' lion ' and ' feline ' which is laid down in the dictionary. The person who learns that, in the English language, a lion counts as a feline learns that the word ' feline ' is so used that it is applicable to everything to which the word ' lion ' is also applicable, and that ' lion, but not feline ' is an expression which has been given no application to anything whatever, actual or imaginable. He does not learn anything new about lions, only about how to speak of them.

Consider a further case. Suppose that it became forbidden in America to call red a ' colour ', so that Americans ended up by saying " Red isn't a colour, although of course blue, yellow, etc., are colours ". On a view like the one expressed by Dr. Ewing they would be uttering a contradiction about the nature of redness and colour. Yet suppose no amount of pointing out facts about the nature of redness and colour served to convince them that red is a colour. The only means of argument left open to an Englishman would be to say " But ' red ' is the name of a colour ". If this were denied, which it would be in this story, the only thing left to say would be, " ' red ' is the name of a colour in English-English, and should be in American-English ". This, of course, would be countered by, " No, ' Red ' should not be the name of a colour in any language ". A stalemate is reached. Yet if " Red is a colour " describes a necessary fact, an inescapable feature of Reality, we should be sure that the dispute could be resolved by pointing out the necessary fact and so showing the advocates of " Red is not a colour " that they are contradicting themselves. But, far from this, we can be sure that such a dispute would remain unresolved whatever facts were pointed out. And the reason would be that Americans preferred to adopt a rule for the use of ' red ' and ' colour ' which the British rejected.

It seems clear that the whole point of calling a statement necessary is that it cannot possibly describe matter of fact. If it did, it would be *contingent* upon matter of fact for its truth-value. But regardless of whether a necessary statement is "synthetic" or "analytic", the only way to change its truth-value is to change a verbal

rule. It is logically impossible to change its truth-value by finding a confuting fact. As the opposite holds in the case of contingent statements, it seems to me that " contingent-necessary " is a philosophical antithesis which it would be hard to banish without confusion resulting ; and if " necessary synthetic " means " necessary and about reality ", it seems to me that " necessary synthetic " applies to no statement whatever.

Suppose we grant, as many philosophers do, that the disjunction " necessary-contingent " distinguishes between those statements which do not depend on any facts for their truth-value (those which are not " about reality "), and those which do (those which are " about reality "). Shall we go on to say that the distinction breaks down if we maintain that it holds for *all* statements, that, for example, it breaks down in the case of " I see with my eyes "?

I do not think it does break down or lose its edge in such an instance. By this I mean, I do not think that the classification " either necessary or contingent " is inapplicable to such statements as " I see with my eyes ", Nor does it seem misleading, useless or pointless to ask with regard to any of these statements, " Is it contingent or is it necessary? " And it seems to me that " It's both " and " It's neither " are ruled out as possible answers.

The point made by Dr. Waismann seems to be that there are reasons for saying that " I see with my eyes " is necessary, but there are also reasons for saying it is contingent, and that since this is the case we end up by not knowing what to say about it. The antithesis has " lost its edge ".

Yet this only happens if the statement " I see with my eyes " is studied in abstraction, *out of context*. As soon as we examine this statement in a context, a natural linguistic habitat, so to speak, it becomes clear in any given case whether the statement is necessary or contingent. For example, suppose Smith says " I see with my eyes ", to which Brown retorts " Well, that's not so amazing. What else *could* you see with ? " and Smith in turn says " John sees with his hands, he's blind ". We know immediately that when Smith says " I see with my eyes " he is making a contingent statement, which he would recognise as falsified if he were to become blind. If Brown then says, " It's impossible for John to see without the use of his eyes. What he does with his hands isn't really *seeing* ", we know that Brown is making a necessary statement. He is using " see " in such a sense that " I see " *means* " I see with my eyes ", and in such a sense that it is logically impossible for anyone to see without

his eyes, *e.g. to see when he is blind*. Smith, on the other hand, when *he* makes the statement " I see with my eyes ", is stating a contingent fact because he is using " see " in such a sense that expressions like " John sees with his hands " are perfectly permissible. Now this is not to say that the " necessary-contingent " antithesis is inapplicable to " I see with my eyes ". On the contrary, it is very appropriately applicable, since applying it brings out the fact that this statement is contingent when it is made in the way Smith made it, but necessary when it is made in the way Brown made it.

Any statement which is ordinarily, or most usually, contingent can be made to function as a necessary statement. In recent conversations I have frequently heard it said, " It wouldn't be *South Pacific* without Mary Martin." Normally everyone would agree that it is contingently true that Mary Martin is playing in *South Pacific*. However outrageously improbable, however it may strain our imaginations to envisage it, it is *logically* possible that John Gielgud should take her part and the show still be *South Pacific*. But notice that if we point out to someone who claims " It wouldn't be *South Pacific* without Mary Martin " that *South Pacific* is playing in New York without her, he would not be in the least inclined to accept this fact as refuting evidence. He would say, " Oh, that's not the *real South Pacific* ". He has made " stars Mary Martin " part of the meaning of " South Pacific ", just as Brown made " with my eyes " part of the meaning of " I see ".

The fact that any statement can be made to function as a necessary statement does not in any way show that there are statements with regard to which it is not appropriate to ask whether they are necessary or contingent ; nor does it show that there are statements which share the features of both necessary assertions and contingent ones.

On the contrary, it seems entirely fruitful and appropriate to ask, when someone states that you cannot see without your eyes, or that no stage show could be *South Pacific* unless Mary Martin played in it, whether he intends to make a factual claim or an irrefutable assertion. Only if we have the answer to this question can we understand precisely what is being asserted. It is an important question with an important answer, especially in philosophy where it is much more difficult than in most ordinary conversation to know what precisely is being asserted. A meta-philosopher, for example, whose interest is to discover the nature of philosophical statements, would certainly at some stage need to view them in the light of the distinction

between statements which are unconditionally, non-factually true, and statements whose truth or falsity depends on the existence or non-existence of appropriate states of affairs.

My contention is that we should retain this well-established classification, provided that it is recognised as a classification of statements into those which are irrefutably true because they do not depend upon non-verbal facts for their truth, and those which are contingently true because they do. Given this interpretation, there appears to be no case in which the distinction breaks down ; for the so-called borderline cases turn not out to be borderline, if they are examined as part of a particular argument or conversation, and not as statements exiled from natural settings for academic purposes.

There is nothing to be gained from ignoring, or blurring by linguistic means, the distinction between the two classes of statements. Only clarity would be lost. Indeed, we may suspect that those who wish to blur the distinction are perhaps, for some psychological reason, antagonistic to clarity.

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A NOTE ON LOGIC AND LINGUISTIC AMBIGUITIES

By P. H. NIDDITCH

IT has become fairly common for books on modern logic, *e.g.* Russell's *Introduction to Mathematical Philosophy*, Johnson's *Logic*, Stebbing's *Modern Introduction to Logic* and Quine's *Methods of Logic*, to include demonstrations of the ambiguities which certain words contain ; words like ' and ', ' a ', ' the ', ' if ', ' because ', ' or ' and ' is '. This kind of analysis is put—or so it seems to me—on the same level as that of what are usually called ' the principles of logic ', for example the law of excluded middle and the principle of inference ; in fact on the same level as the statements of the various schemata of formal logic, that is to say (ideally), the statements of every possible form of proposition and of every possible form of argument. (By " on the same level " I mean having the same field of application). In brief, what I am suggesting is that recently logicians have treated one kind of linguistic analysis as though its results were part of universal logic, *i.e.* formulas universally applicable.

They maintain, in common with their predecessors, that the principles of logic have jurisdiction over arguments whatever the language in which these arguments may be expressed ; that is one implication of saying that the principles are universally applicable, which is what they do say, at least implicitly. But they also seem to hold, at any rate that is the impression that I get, that their statements of the ambiguities of certain words are also, in some sense, universally applicable. This is the doctrine upon which I want to cast doubt ; not that I am asserting its falsity, I should just like to be told the reasons for believing it to be true.

Consider the case of ' a ' and ' the '. (I am now thinking primarily of Russell's Theory of Descriptions). In Russian and Classical Latin and in Ancient Egyptian there are no equivalent words, so that one cannot distinguish, except from the context, between ' a so-and-so ' and ' the so-and-so '. Thus, in Russian *ya byl v aptêke* could mean, abstractly, either " I was at the pharmacy " or else " I was at a pharmacy ".

There would be no point, or perhaps not the same sort of point, in stating the ambiguities of ' a ' and ' the ' in logic books written in Russian, etc. (even if this could be done), as there would be in stating them in logic books written in English. On the other hand, there would be a point and the same sort of point in stating the principles of logic in logic books written in Russian, etc. (even if this couldn't be done), as there would be in stating them in logic books written in English.

To consider another instance, that of ' is '. Logicians tell us that this can stand for existence, " God is " ; equality, " goodness is goodness " ; implication, " to live is to suffer " ; class-membership, " this paper is mine " ; and class-inclusion, " philosophers are fools ". Yet what grounds are given for believing that this ambiguity of the English verb ' to be ' is anything more than an accident peculiar to the English language or a group of languages?

Take Spanish, for example. This has two verbs, ' ser ' and ' estar ', serving the functions of ' to be '. ' Ser ' has all the ambiguities of ' to be ' which were listed above, but ' estar ' has not. It is interesting to note, however, that in one particularly frequent type of sentence ' ser ' or ' estar ' may be used, and the meaning of the sentence is different, depending on which is in fact used. The kind of sentence referred to is " X is y ", when X stands for a noun with or without an article or for a pronoun and y stands for an adjective or adverb ; *e.g.* " he is ill ", " the doctor is here ". If " he is ill " is translated " es

enfermo ", then the sentence means " he is (permanently) ill " ; if it is translated " está enfermo ", then it means " he is (temporarily) indisposed ". Again, " la puerta es abierta " means " the door is (always) open ", and " la puerta está abierta " means " the door is open (at the moment) ". Consequently, one cannot truthfully say that the verb ' to be ' in Spanish has such-and-such meanings, for in Spanish there is not the verb ' to be ' but the verbs ' to be ', and it is only to one of these verbs, ' ser ', that the meanings of the English verb ' to be ' apply. And conversely, to the English verb ' to be ' ' ser ' has an extra meaning ; one denoting permanence, and so too has ' estar ' ; one denoting transience ; perhaps this should be put the other way round viz., that the English verb ' to be ' is more ambiguous than either of the Spanish verbs ' to be ', though I think that this further meaning of ' to be ', marking the permanence or otherwise of the relation of class-membership and class-inclusion, is rather different in nature from the others. None the less it can be important, as in " I am a liar ", " I am bad-tempered ", both for logical theory and in everyday life.

Let me express my criticism in a more general form. In logic books we sometimes find statements that some word, 'V,' has various meanings $s_1, s_2, \ldots s_n$; and these statements appear not to be differentiated in either scope or importance from statements of logical principles. Yet no reasons are produced in support of this lack of differentiation. Whereas might it not very well be the case that in some other language the word equivalent to 'V,' if there were such an equivalent word, has not each of the meanings, $s_1, s_2 \ldots s_n$, or, on the other hand, has more $s_{n+1}, s_{n+2}, \ldots s_{n+m}$?

My conclusion is that whereas the investigation of the principles of logic is always applicable, analyses of ambiguous words might not always be so ; each case has to be treated on its merits. There are at least three cases where the evidence seems to show that some analyses of ambiguities are not always applicable : ' a ', ' the ', ' is '. I infer that the result of this kind of analysis is not on the same level as the investigation of principles of logic, and should not be treated as if it were.

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